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POPULATION DISTRIBUTION AROUND THE NEVADA TEST SITE - 1984

by

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INTRODUCTION

In accordance with an Interagency Agreement between the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE), the Environmental Monitoring Systems Laboratory--Las Vegas (EMSL-LV) conducts a comprehensive offsite radiological safety program in support of nuclear testing at the Nevada Test Site (NTS). As part of this program, the EMSL-LV collects and maintains census information in the areas around the NTS to facilitate the planning and management of surveillance and monitoring operations, and to assess potential and actual population exposures resulting from radioactive releases into the areas beyond the boundaries of the NTS. Included in the information compiled are data concerning the number of resident adults and children, family milk cows, milk goats, and dairy cows located in these offsite areas. These data from areas between 40 and 200 kilometers of the control point on the Nevada Test Site are verified immediately prior to each nuclear test.

GENERAL POPULATION AND BACKGROUND CONSIDERATIONS

NEVADA

Nevada has a total population of 800,493 (Bureau of Census, 1981) of which 682,947, or 85.3 percent, reside in urban areas and 117,546, or 14.7 percent, in the extensive rural areas. The Las Vegas and Reno metropolitan areas account for 100 percent of the total urban population, although 25 Nevada communities have populations of 2,500 or more. The Las Vegas area is 117 kilometers from the control point (CP-1) on the NTS on an azimuth of 136° and the Reno area is 434 kilometers on an azimuth of 311°. The rural population is widely scattered throughout the state with more than 89 percent of the people residing in areas with populations less than 1,000. The urban population increased 72.8 percent over the 1970 census while the rural population increased 25 percent. The major incorporated cities experiencing the highest growth rate were: Carson City - 32,022, up 107 percent; Henderson - 24,363, up 49 percent; Las Vegas - 164,674, up 31 percent; Reno 100,756, up 38 percent; and Sparks - 40,780, up 69 percent. Clark county population increased from 273,288 in 1970 to 463,087, up 59 percent, and that of Washoe went from 121,068 to 193,623, up 63 percent, in the same period.

Nevada has approximately 8,900,000 acres in farm and ranch land and an estimated 2,900 farms or ranches with an average size of 3,069 acres (Drain and Weber, 1983). During 1982, Nevada farms and ranches produced approximately 1,500,000 tons of crops with a total value of $125,600,000. Principal crops harvested during 1982 included potatoes, 13,000 acres; all grain, 61,000 acres; cotton and seed, 2,700 acres; alfalfa seed, 13,000 acres; and all hay, 495,000 acres.

Livestock production is the most important phase of agriculture. The value of all livestock totaled $242,101,000 in 1982. Principal livestock raised are cattle and calves, approximately 626,000 beef and 24,000 milk; sheep and lambs, about 110,000 head; swine, about 14,000 head. Milk production is estimated at 225,000,000 pounds at a market value of $29,925,000. There are an estimated 15,000 chickens on Nevada farms and ranches with a total value of $30,000. The 1982 egg production of 1.8 million was valued at $78,000.

Nevada's nonfuel minerals output value in 1982 was estimated to be $467,000,000 according to the Bureau of Mines, U.S. Department of Interior (Lockhard, 1983). The state again led the nation in production of barite, gold, and mercury. Based on preliminary statistics, Nevada rated 14th nationally in the value of its nonfuel minerals production.

According to the Nevada Bureau of Minerals bimonthly oil production reports, approximately 597,000 barrels of oil were produced in Nevada during 1982, with an estimated value of $17,895,000.

ADJACENT AREAS OF CALIFORNIA, UTAH AND ARIZONA

The Mohave Desert of California which includes Death Valley National Monument, lies along the southwestern border of Nevada. The population within the Monument varies considerably from season to season with fewer than 200 permanent residents and tourists in the area during any given period in the summer months. However, during the winter, as many as 12,000 tourists and campers can be in the area, particularly during the major holiday periods. The largest town in this general area is Barstow, located 103 kilometers south-southwest of the NTS with a population of over 17,600 (Bureau of Census, 1983). The Owens Valley, where numerous farms, ranches and small towns are located, lies 40 to 60 kilometers west of Death Valley. The largest town is Bishop, located 225 kilometers west-northwest of the NTS with a population of 3,300 (Bureau of Census, 1983).

The extreme southwestern region of Utah is somewhat more developed than the adjacent part of Nevada. The largest town is St. George located 216 kilometers east of the NTS with a population of 11,350 (Bureau of Census, 1983). The next largest community is Cedar City, with a population of approximately 11,000 and located 280 kilometers east-northeast of the NTS. Both communities engage in seasonal fruit and vegetable production. Major crops produced in this area are barley and alfalfa (Christenson and Sherman, 1984). The area also has several small Grade A dairies.

The extreme northwestern region of Arizona is mostly undeveloped range land with the exception of that portion in the Lake Mead Recreation area. The largest town in the area is Kingman, located 280 kilometers southeast of the NTS with a population of about 9,260 (Bureau of Census, 1983). Several retirement communities are found along the Colorado River, primarily at Lake Mohave and Lake Havasu. The Bullhead City-Riviera community has a combined population of over 10,000 people.

CLOSE-IN POPULATION DISTRIBUTION

The offsite areas adjacent to the NTS are predominantly undeveloped desert or mountainous lands owned by the Federal government. Much of the government land is leased for grazing or mining. As shown in Figure 1, population sites are widely scattered and consist of several farming communities, isolated ranches and mines, and a few villages which serve as trade centers. The inhabited location (bold numbers) shown in Figure 1 are keyed to Table 1, which lists the current population estimates for each location. For consistency, a location was identified with the same number that was assigned it if it was also a sampling station for one of the various surveillance networks operated by the EMSL-LV as part of the Radiological Safety Program.

For Figure 1, the offsite areas out to 200 kilometers (125 miles) were divided into 22.5° sectors representing the 16 points of the compass, centered on the Control Point 1 (CP-1) at the NTS. CP-1 is located roughly at the center of the NTS at 36° 15' N and 116° 04' W (Environmental Surveillance, 1973). Forty-kilometer (25-mile) radius increments are also shown on the map.

The shaded areas are considered uncontrollable. These are areas where, because of large numbers of people, the EMSL-LV cannot effectively implement protective or remedial actions that would assure public safety. Thus, some of the sectors are considerably shortened from the 200-kilometer radius where they are blocked by uncontrollable areas closer to the NTS. The largest "window" where the controllable area of a sector extends to 200 km is from 326.25° to about 47°. The other sectors are controllable to much shorter distances, varying from 40 km to the south and west to 120 km in the northwest sector.

Several small farming communities are located within 100 kilometers of CP-1, the largest being the 1,500-2,100-square-kilometer area of Pahrump Valley. The community of Pahrump has an estimated population of 5,500 and is located about 70 kilometers south of CP-1. The Amargosa Farm area relatively nearby has a population of approximately 1,500 and is located about 50 kilometers to the southwest. Penoyer Farms, an extensive alfalfa ranch, has a population of 15 and is located 80 kilometers to the northwest. Hiko, about 100 kilometers to the northeast, has a population of 70 people engaged in farming and ranching activities. To the south of Hiko is the fertile Pahrahagat Valley, 45 to 50 kilometers long by 3 kilometers wide, about 90 kilometers to the northeast of the CP-1. The estimated 1,100 people (the majority in the village of Alamo) in this Valley engage in a variety of gardening, farming, and ranching activities.

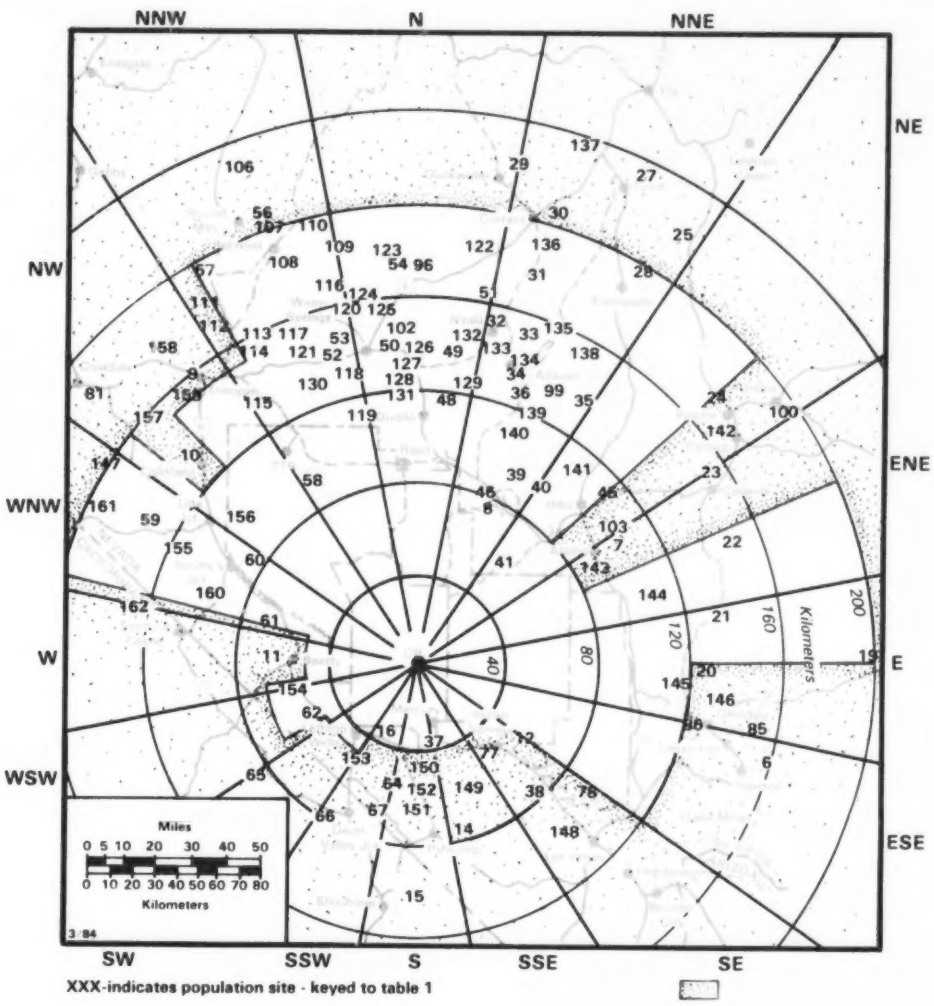

Figure 1. Location of selected population sites around the Nevada Test Site.

TABLE 1. POPULATION OF SELECTED LOCATIONS SURROUNDING THE NEVADA TEST SITE

Map No.*	Location	Population	Sector	Approx. Distance from CP-1 Miles/Kilometers
6.	Overton, NV	1,750	ESE	92/148
7.	Alamo, NV	700	ENE	56/90
8.	Rachel, NV	45	NNE	47/75
9.	Tonopah, NV	2,500	NW	97/155
10.	Goldfield, NV	670	NW	80/131
11.	Beatty, NV	800	W	40/65
12.	Indian Springs, NV	1,500	SE	28/46
14.	Pahrump, NV	5,500	S	48/77
15.	Shoshone, CA	200	S	67/107
16.	Lathrop Wells, NV	45	SW	26/42
19.	Mesquite, NV	920	E	117/187
20.	Rox, NV	10	E	78/125
21.	Carp, NV	8	E	83/132
22.	Elgin, NV	12	ENE	87/139
23.	Caliente, NV	1,000	ENE	98/157
24.	Pioche, NV	600	NE	114/182
25.	Geyser, NV	10	NNE	135/216
27.	Lund, NV	325	NNE	149/238
28.	Sunnyside, NV	20	NNE	122/195
29.	Duckwater, NV	115	N	142/227
30.	Currant, NV	35	NNE	132/211
31.	Blue Eagle Ranch, NV	5	NNE	120/192
32.	Nyala, NV	3	N	96/154
33.	Casey's Ranch, NV	4	NNE	100/160
34.	Adaven, NV	intermittent	NNE	89/142
35.	Complex 1, NV	2	NNE	80/128
36.	Pine Creek Ranch, NV	1	NNE	86/138
37.	Crystal, NV	65	SSW	25/140
38.	So. Desert Correctional Ctr., NV	900	SE	38/61
39.	Koyen's Residence, NV	2	NNE	60/96
40.	Tempiute (Union Carbide), NV	20	NNE	58/93
41	Tikaboo Valley (Medlin Ranch), NV	5	NE	47/75
45.	Hiko, NV	75	NE	66/105
46.	Penoyer Farms, NV	15	NE	53/85
47.	Reed Ranch, NV	intermittent	N	58/93
48.	Diablo, NV	intermittent	N	72/115
49.	Twin Springs Ranch, NV	12	N	88/141
50.	Warm Springs, NV	4	N	91/146
51.	Blue Jay Maintenance Station, NV	6	N	102/163

(continued)

TABLE 1. (Continued)

Map No.*	Location	Population	Sector	Approx. Distance from CP-1 Miles/Kilometers
52.	Clark Station, NV	3	NNW	90/144
53.	Stone Cabin Ranch, NV	4	NNW	96/153
54.	Hot Creek Ranch, NV	8	N	108/173
56.	Round Mountain, NV	550	NNW	137/219
57.	Manhatten, NV	100	NNW	125/200
58.	Tonopah Test Range, NV	1,500+	NNW	70/113
59.	Lida, NV	10	WNW	87/139
60.	Scotty's Jct. (Sarcobatus Flat), NV	20	WNW	61/97
61.	Springdale, NV	35	WNW	41/65
62.	U.S. Ecology, NV	16	W	35/56
63.	Amargosa Farm Area, NV	1,500	SW	40/64
64.	American Borate Mill, NV	65	SSW	35/56
65.	Furnace Creek, CA	200-1,200	SW	55/88
66.	Valley Crest, CA	150	SW	50/80
67.	Death Valley Junction, CA	20	SSW	47/75
77.	Cactus Springs, NV	10	SE	31/49
78.	Desert Natl. Wildlife Rng. (Corn Creek), NV	4	SE	50/80
81.	Coaldale, NV	10	NW	125/200
85.	Logandale, NV	1,100	ESE	90/144
86.	Moapa, NV	1,000	ESE	83/133
93.	Crystal Springs , NV	25	NE	63/101
96.	Blue Jay Springs, NV	5	N	105/168
99.	Uhalde Ranch, NV	2	NNE	87/139
100.	Ursine, NV	60	NE	121/193
102.	Site C, NV	20	N	104/166
103.	Ash Springs, NV	70	NE	62/99
106.	Carver's Area, NV	300	NNW	142/227
107.	All Minerals Corp., NV	65	NNW	131/210
108.	Belmont, NV	10	NNW	122/195
109.	Barley Creek Ranch, NV	2	NNW	130/208
110.	Hage Ranch, NV	2	NNW	138/221
111.	Peavine Ranch and Campground, NV	17	NNW	132/211
112.	San Antonio Ranch, NV	2	NNW	126/201
113.	Russell Ranch, NV	5	NNW	107/171
114.	Tonopah City Water Wells, NV	1	NNW	105/168
115.	Pine Creek Wells, NV	2	NNW	73/117
116.	Hunts Canyon Area, NV	2	NNW	117/187

(continued)

TABLE 1. (Continued)

Map No.*	Location	Population	Sector	Approx. Distance from CP-1 Miles/Kilometers
117.	Miller Residence, NV	4	NNW	103/165
118.	Circle K Ranch, NV	1	NNW	88/141
119.	Silver Bow, NV	intermittent	NNW	68/109
120.	Tybo, NV	3	NNW	100/160
121.	Emerson Turquoise Mine, NV	2	NNW	91/146
122.	Lockes, NV	3	N	115/184
123.	Meyer's Place, NV	3	N	112/179
124.	Keystone Canyon, NV	intermittent	N	101/162
125.	Obyt Mill, NV	2	N	100/160
126.	Bellehelen, NV	intermittent	N	72/115
127.	Eden Creek, NV	intermittent	N	75/120
128.	Reveille Project, NV	intermittent	N	72/115
129.	Gila Project, NV	intermittent	N	72/115
130.	Golden Arrow, NV	intermittent	N	58/93
131.	West Reveille Mill, NV	intermittent	N	83/133
132.	Bevis Ranch, NV	5	N	90/144
133.	Willow Creek, NV	intermittent	NNE	95/152
134.	Cottonwood Ranch, NV	intermittent	NNE	87/139
135.	Wadsworth Ranch, NV	intermittent	NNE	90/144
136.	Eagle and Trap Springs Oil Fields, NV	25	NNE	125/200
137.	Preston, NV	75	NNE	133/213
138.	Marguerite Springs, NV	2	NNE	92/147
139.	Freiburg Project, NV	intermittent	NNE	81/130
140.	Freiburg Well, NV	intermittent	NNE	78/125
141.	Nash Ranch, NV	1	NE	67/107
142.	Panaca, NV	700	NE	110/176
143.	Pahranagat Natl. Wildlife Refuge, NV	2	ENE	59/97
144.	Coyote Springs Ranch, NV (Judy's)	intermittent	ENE	62/99
145.	Warm Springs Resort, NV	100	E	78/125
146.	Glendale, NV	100	E	83/133
147.	Fishlake Valley, (Dyer), NV	310	WNW	115/184
148.	Mt. Charleston Area, NV	500	SE	53/85
149.	Johnnie, NV	8	S	38/61
150.	Spring Meadows Area, NV	15	SSW	40/64
151.	Ash Meadows Area, NV	25	SSW	41/66
152.	American Borate Housing Complex, NV	280	SSW	36/58

(continued)

TABLE 1. (Continued)

Map No.*	Location	Population	Sector	Approx. Distance from CP-1 Miles/Kilometers
153.	Industrial Minerals Venture Mill, NV	85	SW	33/53
154.	Rhyolite, NV	12	W	40/64
155.	Goldpoint, NV	20	WNW	77/123
156.	Lida Junction, NV	8	NW	72/115
157.	Silver Peak, NV	400	NW	106/170
158.	Anaconda Moly, NV	300	NW	127/203
159.	Tonopah Airport, NV	100	NW	100/160
160.	Bonnie Clare, NV	2		60/96
161.	Oasis, CA	45	WNW	125/200

*The map number assigned each location is the same number assigned the location if it also served as sampling station for the surveillance networks operated by EMSL-LV. Missing numbers were issued to locations outside the scope of this map (e.g. No. 1 - Salt Lake City, Utah) or unpopulated locations (e.g. No. 44 Queen City Summit, NV).

Other farming communities are farther than 100 kilometers from the CP-1. They include the Moapa Valley to the east and the nearby communities of Logandale and Overton with a combined population of about 4,000, the town of Panaca to the northeast with a population of 700, and the farming and dairying towns of Preston and Lund to the north-northeast with about 325 residents.

The largest towns in the near offsite areas are Tonopah, 160 km to the northwest with a population of nearly 2,500, and Beatty, approximately 65 km to the west with a population of about 800. Between them lies Goldfield with a population of 670. Pioche to the northeast with a population of 600, and Round Mountain to the north-northwest with 550 people, are at distances greater than 160 kilometers from CP-1.

The regions north and east from the NTS are primarily open range land used for cattle grazing. Some of the valleys (Coal and Garden Valleys) in the north-northeast and northeast sectors are used for winter grazing by sheep. Up to six or eight bands of sheep may be present in the area during November through April.

Within an 80 kilometer radius of the CP-1, there are eight mining ventures being operated on a regular or semi-regular basis. Two of these are in the Tempiute area to the northeast, and the remainder in the Beatty and Death Valley areas to the west and southwest.

CONTROLLABLE POPULATED AREAS

The EMSL-LV will respond to accident situations in which nuclear testing activities release radioactivity into the offsite area. Protective and remedial actions (i.e. evacuation; shelter; access control; pasture control; milk, food, and water control) will be taken to reduce whole body exposure and to minimize thyroid dose to the offsite residents. As stated previously, the feasibility of applying these actions varies with the density of the population and other geographic factors and, therefore, are considered impractical for certain portions of the sectors (uncontrollable) shaded in Figure 1.

As standard procedure during the two days before each nuclear test, EMSL-LV monitors survey all roads, permanent habitations and potentially inhabitated locations within the controllable areas. Transient populations such as hunters, fishermen, sheepherders, cowboys, or highway maintenance workers, are noted. With this knowledge of population distribution and the pre-event trajectory information, a safety plan is established with reasonable confidence that the locations of all people in the controllable areas at or shortly after the event, are known.

Table 2 lists and Figure 2 shows the populations, both permanent and transient, expected in the controllable portions of sectors out to a distance of 200 kilometers. The description of these controllable areas will move counterclockwise around the NTS beginning with the east sector. The population figures listed in Tables 1 and 2 and those that are discussed in the description of each sector are either from the 1980 census reports (Bureau of Census, 1981 and 1983) or from current surveys by EMSL-LV monitors.

The area between Moapa, Glendale and the lower Pahranagat Lake contains few permanent residents out to a distance of 160 kilometers (2 at the wildlife refuge, 12 at Elgin, 8 at Carp and 10 at Rox). The transient population may rise dramatically during the desert bighorn sheep hunt during November-December (35-40 permits issued) and waterfowl season from October-December (650 hunter days) with 50 plus hunters on opening day. Several hundred hunters may be present during the opening day of the upland game season that starts in September.

The inhabited areas of the northern part of the northeast (NE) sector consists of only the Medlin Ranch (5 people), Nash Ranch (1 person) and the Hiko area which contains about 75 residents dispersed over a reasonably small area. From October to January, waterfowl hunters (1,000 hunter days, 60-100 hunters opening day) may also be present at Key Pittman Refuge at Hiko with another 1,000 (fishermen, campers, etc.) spread over the rest of the year. During the period December-April, several sheep camps may be located between 120 and 200 kilometers from the CP-1.

TABLE 2. PERMANENT AND TRANSIENT POPULATION ESTIMATES WITHIN CONTROLLABLE SECTORS (40-200 km)

Offsite Sectors Excluding Uncontrollable Areas*	Permanent Population	Estimated Transient Population	Permanent Population	Estimated Transient Population	Permanent Population	Estimated Transient Population	Permanent Population	Estimated Transient Population
	Distance from CP-1							
	40 - 80 km		80 - 120 km		120 - 160 km		160 - 200 km	
E and ENE+	0	0-40	2	0-100	30	0-200	0	0-30
NE++	5	0-5	76	0-100	0	0-50	0	0-30
NE	45	0-5	37	0-20	11	0-20	50	0-400
N	0	0-10	0	0-25	56	0-30	19	0-30
NNW	-	-	-	0-5	11	0-75	161	0-100
WNN	35	0-15	30	0-25	30	0-30	-	-
WSW	16	0-5	200	250-10000	-	-	-	-
SSW	33	0-25	0	0-1000	-	-	-	-

* As shown on Figure 1
+ Portions of E and ENE sectors between Moapa and Lower Pahranagat Lake
++ Portion of NE Sector north of Alamo

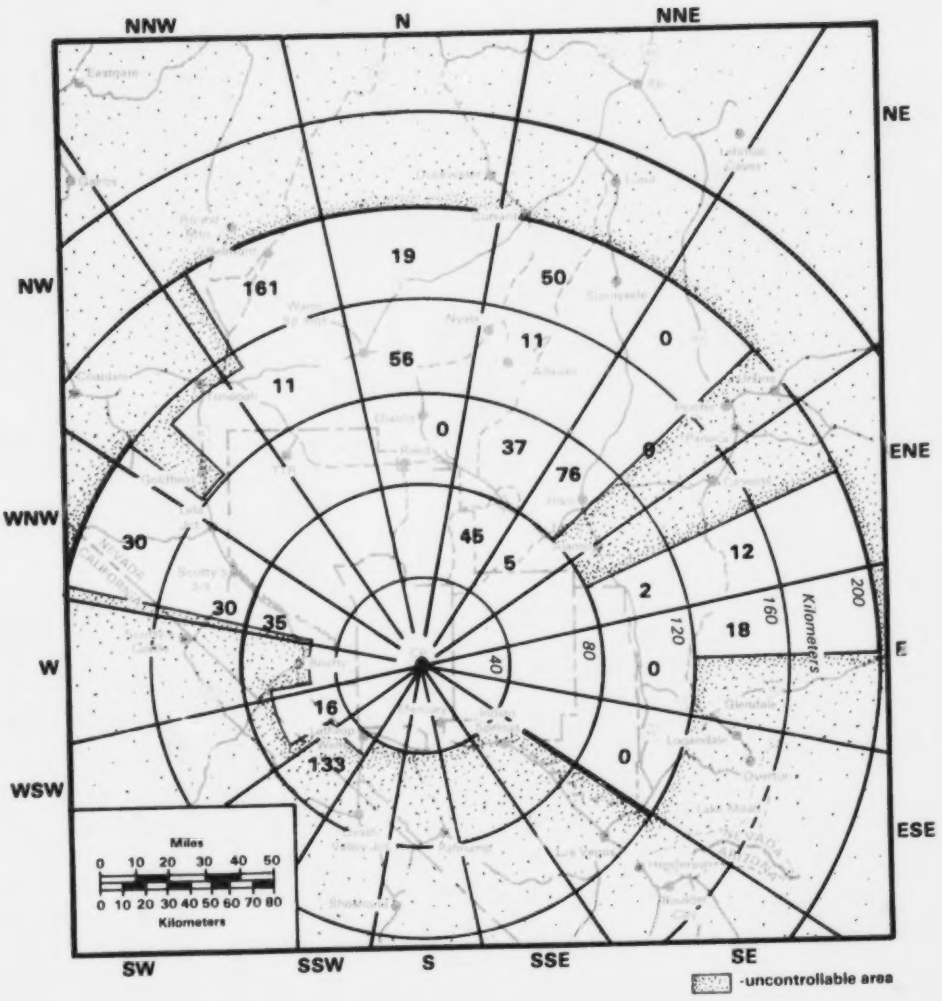

Figure 2. Population distribution within controllable sectors (40-200 km).

All of the north-northeast (NNE), north (N), and north-northwest (NNW) sectors are considered to be controllable out to 200 km as the population in these areas is small and widely scattered. The particular locations and number of people residing there are:

- Moving east to west along Highways 375 and 6: Tempiute-20, Rachel-45, Koyens-2, Penoyer Farms-15, Twin Springs Ranch-12, Warm Springs-4, Eden Creek-2, Emerson's Mine-2, Circle K Ranch-5, Clark Station-3, Stone Cabin Ranch-4, Miller Residence-4, Pine Creek Wells-1.

- Moving north of these highways, out to a distance of 200 km from CP-1; Marguerite Springs-2, the Complex-2, Uhalde Ranch-2, Pine Creek Ranch-1, Nyala-3, Casey's Ranch-4, Sunnyside-20, Blue Eagle Ranch-5, Eagle and Trap Spring Oil Fields-25, Bevis Ranch-5, Blue Jay Maintenance Station-6, Blue Jay Springs-5, Meyer's Place-3, Hot Creek Ranch-8, Obyt Mill-2, Tybo-3, Site C-20, Lockes-3, Tonopah City Wells-3, Russell Ranch-5, Hunts Canyon-3, Barley Creek Ranch-2, Belmont-10, Peavine Ranch-9, San Antonio Ranch-5, and Manhatten-125.

Transient population increases may be expected during the deer hunting season that runs from September through November (3,000 permits issued for management areas within these sectors) and the upland game season that runs from September through March (several thousand license holders hunt in these areas). Six to eight bands of sheep may be in the NNE sector during the winter months and groups of cowboys may be rounding up cattle especially in spring and late fall. Campers and hikers may utilize the State, Bureau of Land Management and Forest Service campgrounds and trails in the summer months. The Kirch Wildlife Management area at Sunnyside has some 2,600 hunters during the October-January waterfowl season (200-400 on opening day) with another 6,000 fishermen and campers throughout the year.

The northwest (NW) sector is considered uncontrollable beyond 120 km because of the presence of Tonopah and Goldfield.

The west-northwest (WNW) sector has only a dozen or so inhabited locations within 160 kilometers. There are 8 people at Lida Junction (Cottontail Ranch), 20 in the Scotty's Junction (Sarcobatus Flats) area, 10 at Lida, 20 at Goldpoint, 2 at Bonnie Clare and about 35 at the Springdale area ranches (just north of Beatty). Transient populations will include hunters during the open seasons, prospectors, miners, hikers and travelers of Highway 95.

The heavy population concentrations in Beatty, Death Valley National Monument and the Amargosa farm area make the west (W), west-southwest (WSW), southwest (SW) and south-southwest (SSW) sectors uncontrollable except for narrow windows which contain few people out to 40-80 kilometers. The WSW sector contains only the 16 employees of U.S. Ecology and 28 miners at the Sterling Mine until the Death Valley National Monument is reached at approximately 80 kilometers. Population within the monument varies greatly with different seasons. The portion of the SSW and SW sectors between Lathrop Wells (45 people) and Desert Rock only contains Crystal (65 people), Johnnie area (8 people), Spring Meadows (15 people), Ash Meadows (25 people) and Death Valley Junction (20 people). If the Industrial Mining Venture and American Borate

Complex near the Nevada-California State line are included, an additional 430 people must be considered.

Considered uncontrollable are the south (S), south-southeast (SSE), southwest (SW) and east-southeast (ESE) sectors surrounding the NTS which contain the heavily populated areas of Indian Springs, Mt. Charleston, Pahrump Valley, Las Vegas Valley and the Virgin and Muddy River Valleys.

DAIRY HERD, FAMILY COW AND MILK GOAT CENSUS INFORMATION

The EMSL-LV, as part of the offsite radiological safety program, maintains a directory of milk producers and processors within Nevada and portions of adjacent states. Knowledge of the exact locations of milk cows and goats is needed so that sources of milk can be rapidly found and sampled in the event of a release of radioactivity from the NTS. This knowledge is also essential if remedial action (change of diet, storage of milk, etc.) is deemed necessary to protect the milk supply.

The EMSL-LV offsite monitors continuously update any changes that occur in the resident and milk cow populations in the areas extending to a distance of approximately 160 kilometers beyond CP-1. Detailed surveys beyond the 160 km radius are conducted biannually to locate each farm where cows or goats are kept for milking.

The last survey was conducted June through August 1983, and covered all of Nevada; the California counties of Inyo, Kern, Mono, and San Bernardino; the Idaho counties of Blaine, Gooding, Jerome and Twin Springs; and the Utah counties of Beaver, Box Elder, Iron, Juab, Millard, Tooele, and Washington. The census results are summarized in Figures 3 and 4.

The census results are compiled biannually in a directory (Nuclear Radiation Assessment Division - 1984). This directory (intended for internal use only) provides the name of each dairy cow or goat owner, location, direction for finding, azimuth and distance from the CP-1, latitude and longitude, population of adults and children, and number of dairy cows, Grade (A or B), family cows and milk goats. Figure 5 shows the location of family cows, goats and dairies within the immediate area of the NTS. Only a few family cows or goats exist within the controllable sectors with the only Grade A dairies located at Lund, nearly 240 kilometers from the CP.

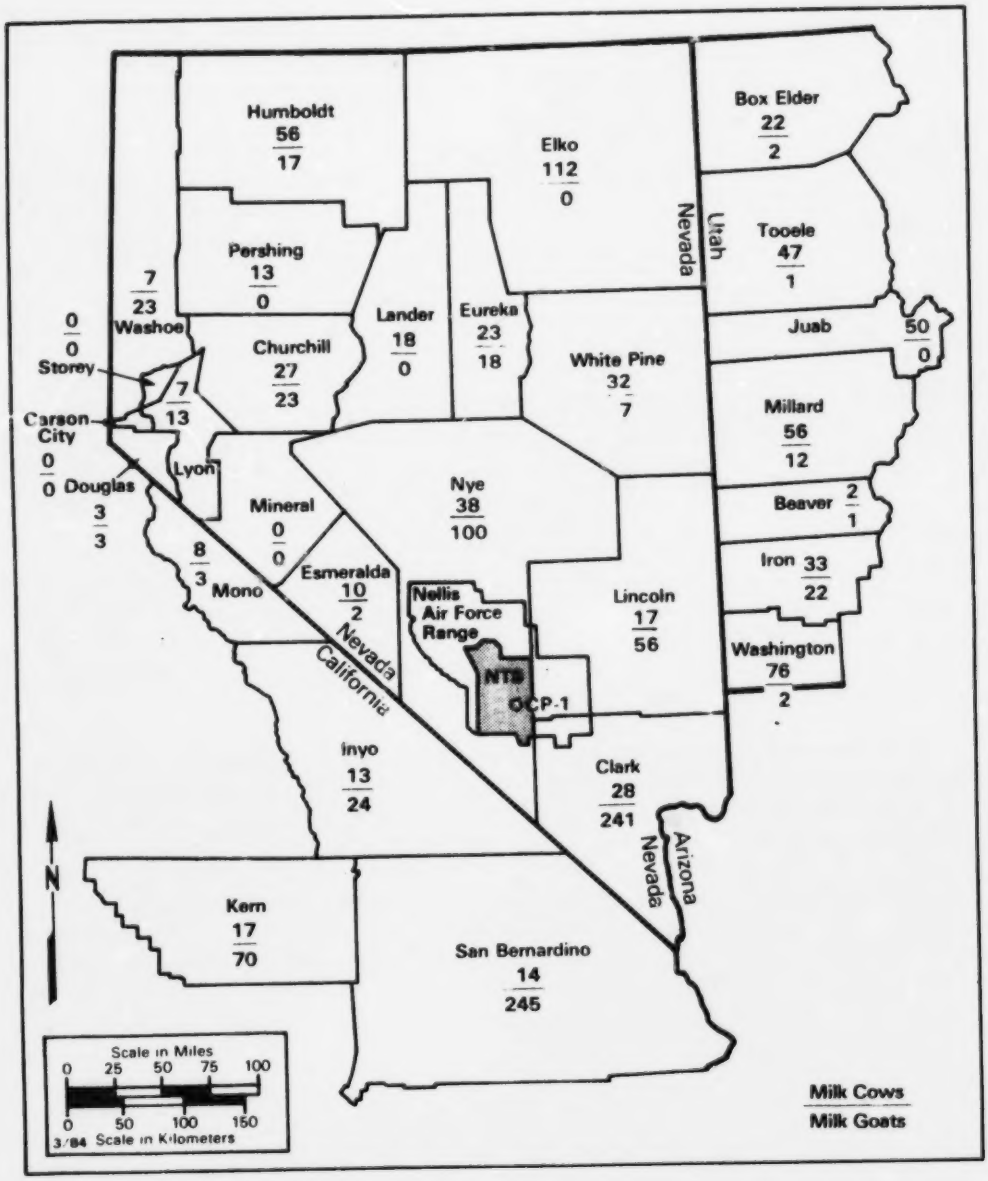

Figure 3. Distribution of family milk cows and goats around the NTS by county (1983).

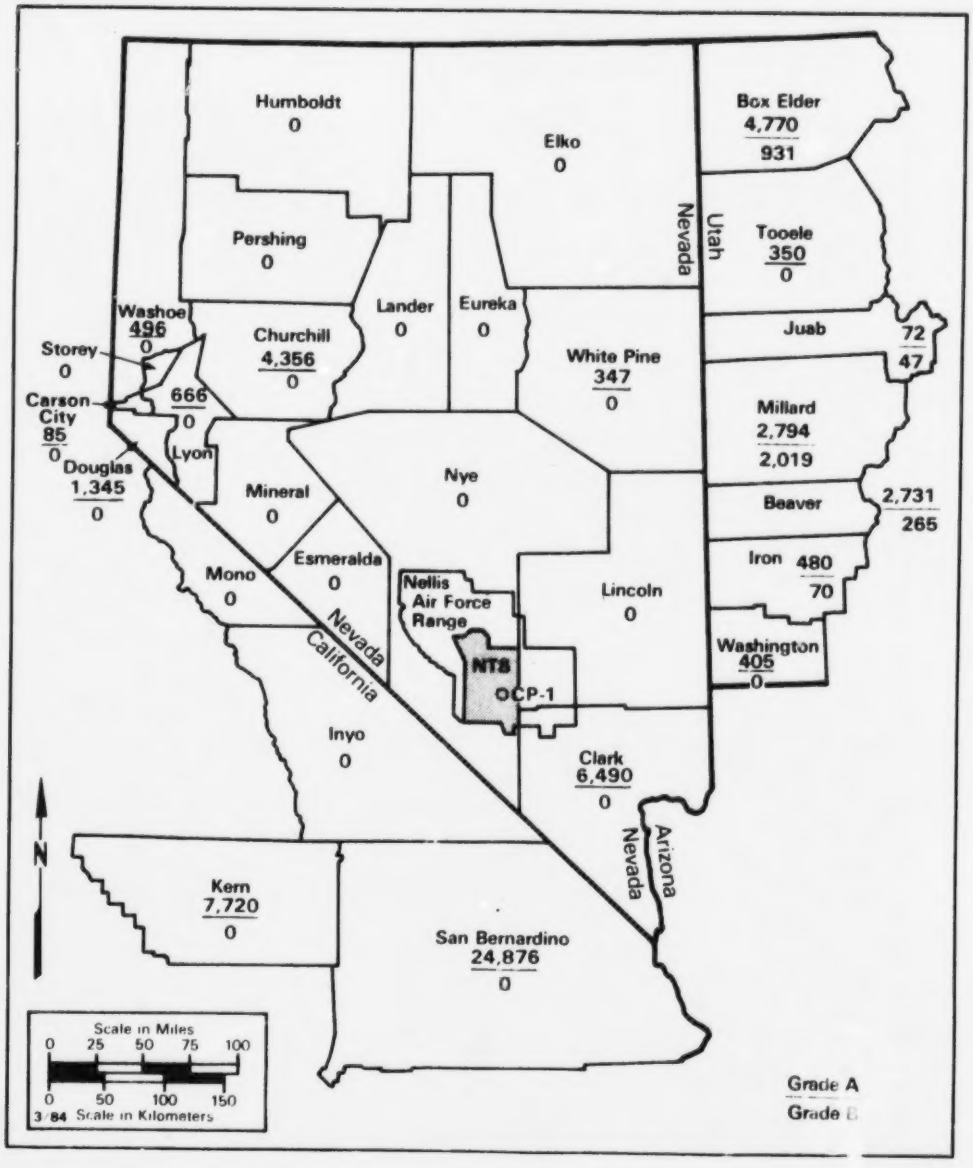

Figure 4. Distribution of Grade A and Grade B dairy cows around the NTS by county (1983).

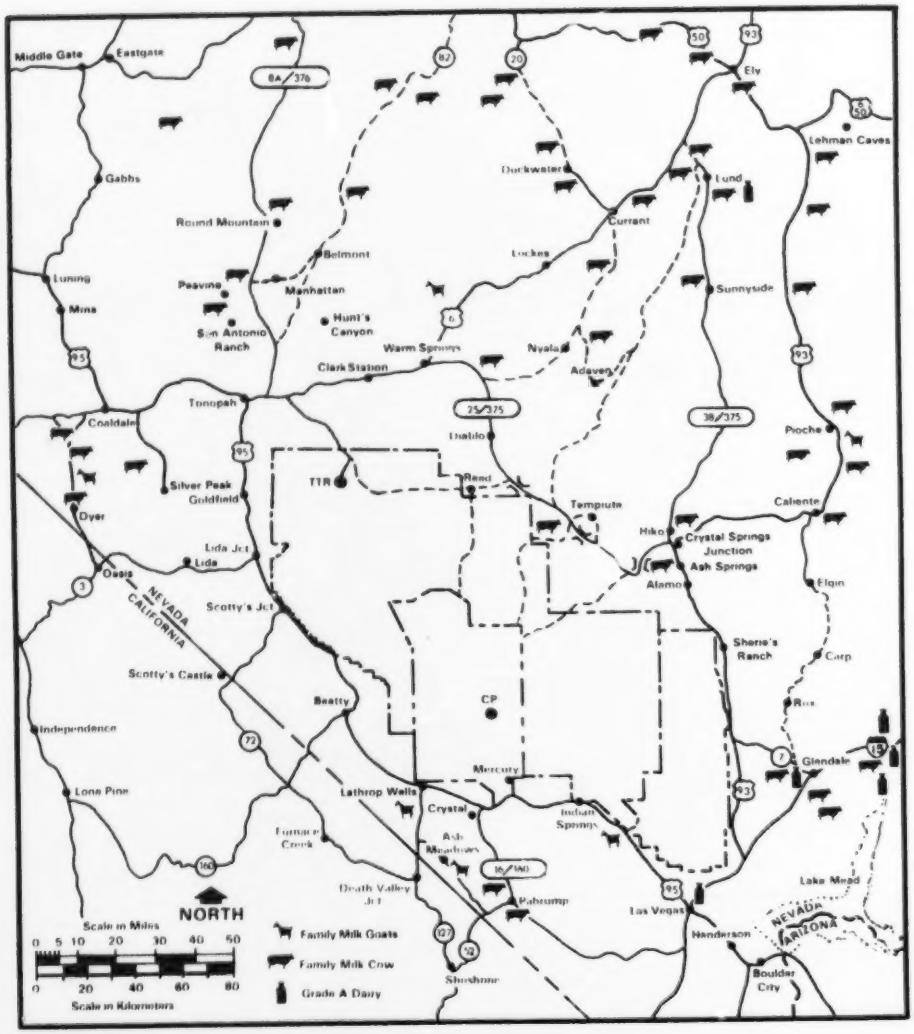

Figure 5. Location of family cows, family goats, and Grade A dairies around the Nevada Test Site.

SUMMARY

The EMSL-LV, under Interagency Agreement No. DE-AI08-76DP00539 with the DOE, conducts an offsite radiological safety program outside the boundaries of the NTS. As part of this program, the EMSL-LV maintains a comprehensive and current listing of all rural offsite residents and dairy animals within the controllable sectors (areas where the EMSL-LV could implement protective or remedial actions that would assure public safety). These listings are verified immediately prior to each nuclear test. Currently, the controllable sectors out to 200 kilometers from CP-1 are considered to be the entire NE, NNE, N, and NNW sectors and portions of the E, ENE, and NE sectors. The WNW sector is controllable out to 160 kilometers. The WSW and SSW sections are considered controllable out to 40 kilometers. No major population centers or dairy farms lie within these sectors.

This report was produced to give a brief overview of the population distribution and information on the activities, within the area of consideration. The number of people in a sector often vary with seasonal activities (sheep grazing, hunting, etc). Other factors such as the price of minerals will also affect population numbers as mining operations open and close in response to the market.

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16. ABSTRACT

The Environmental Monitoring Systems Laboratory (EMSL-LV) conducts an off-site radiological safety program outside the boundaries of the Nevada Test Site. As part of this program, the EMSL-LV maintains a comprehensive and current listing of all rural offsite residents and dairy animals within the controllable sectors (areas where the EMSL-LV could implement protective or remedial actions that would assure public safety). This report was produced to give a brief overview of the population distribution and information on the activities within the controllable sectors. Obviously the numbers of people in a sector change dependent upon the season of the year, and such diverse information as the price of minerals which relates to the opening and closing of mining operations.

Currently, the controllable sectors out to 200 kilometers from the Control Point on the NTS are considered to be the entire northeast, north-northeast, north, north-northwest, west-northwest sectors and portions of the east and east-northeast sectors. The west-southwest and south-southwest sections are considered controllable out to 40-80 kilometers. No major population centers or dairy farms lie within these sectors.

17. KEY WORDS AND DOCUMENT ANALYSIS

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